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Stability and stiffness of asphaltic concrete incorporating waste cooking oil (Article)

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Abstract

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The application of waste material is extensively used as a partial replacement to produce a new asphalt binder with the improvement of binder performance. However, limited information is available on the use of waste cooking oil (WCO) in hot mix asphalt. In this regard, the main objective of this research is to study the influences of WCO as a supplementary binder on the Marshall Stability properties of asphaltic concrete. The properties investigated are stability, stiffness and flow. Results show that the treated WCO proved better strength performance as compared to the other asphalt mixture. It also found that the modified mixtures incorporating untreated and treated WCO increased the tendency for deformation exposure as compared to the control mixture. Generally, Marshall Stability result for treated WCO mixture was improved from untreated WCO mixture and exceeded the control mixture performance. © BEIESP.

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